UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,483	01/11/2001	Srinivas Bangalore	2000-0034	9337

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EXAMINER
VO, HUYEN X

ART UNIT	PAPER NUMBER
2655	4

DATE MAILED: 06/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 January 2001*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Kono et al. (US Patent No. 6169972) in view of Aust (US Patent No. 5754736).

1.   Regarding claim 1, Kono et al. disclose a method of performing natural language

generation, the method comprising the steps of:

selecting a reference grammar (*col. 14, ln. 61 to col. 15, ln. 23*);

applying an input dependency tree to a tree-choosing module to select syntactic

realizations for each node in the derivation tree (*col. 15, ln. 25 to col. 16, ln. 5, word

lattice is generated based on the input signal by connecting node of words together

forming candidate sequences of words*);

producing a word lattice for the selected syntactic realization comprising all

possible word sequences permitted by the input dependency structure, the chosen

syntactic realizations, and the reference grammar (*col. 16, ln. 1-45*); and

choosing a linear precedence output string of least cost from the word lattice (*col.

18, ln. 6-13, the best result generated indicates less error cost*).

Kono et al. do not specifically disclose a method using stochastic tree model to

select syntactic realizations for each node in the derivation tree. However, Aust teaches

a method using stochastic tree model to select syntactic realizations for each node in

the derivation tree (*col. 4, In. 21-63*). The advantage of the using the teaching of Aust in

Kono et al. is to enhance system's efficiency by recognizing meaningful words.

Since Kono et al. and Aust are analogous art because they are from the same

field of endeavors, it would have been obvious to one of ordinary skill in the art at the

time of invention to modify Kono et al. by incorporating the teaching of Aust in order to

enhance system's efficiency by recognizing meaningful words.

2.   Regarding claim 4, Kono et al. disclose a natural language generator for

translating an input dependency syntax tree into a natural language output, the

generator comprising:

a tree choosing module, responsive to the input dependency syntax tree, for

selecting syntactic realizations for each node in the input dependency tree (*col. 15, In.

25 to col. 16, In. 5, word lattice is generated based on the input signal by connecting

node of words together forming candidate sequences of words*), the tree choosing

module including a tree model database for use in selection (*col. 5, In. 46-54, inherently

indicates a word model database for generating candidates words to form word lattice*);

an unraveling module, responsive to the selected tree-adjoining grammar trees

created by the tree choosing module and including a predetermined reference grammar

database for creating from the syntactic realizations a lattice of all possible

linearizations of said trees using the reference grammar of said database (*col. 16, ln. 1-45, a number of candidate sequences are produced*); and

a linear precedence chooser module for selecting the most likely traversal through the lattice as the natural language output of the generator (*col. 18, ln. 6-13, the best result is term of probabilities is generated*).

Kono et al. do not specifically disclose a method using stochastic tree model to select syntactic realizations for each node in the derivation tree. However, Aust teaches a method using stochastic tree model to select syntactic realizations for each node in the derivation tree (*col. 4, ln. 21-63*). The advantage of the using the teaching of Aust in Kono et al. is to enhance system's efficiency by recognizing meaningful words.

Since Kono et al. and Aust are analogous art because they are from the same field of endeavors, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Kono et al. by incorporating the teaching of Aust in order to enhance system's efficiency by recognizing meaningful words.

3.   Regarding claim 6, Kono et al. further disclose that the unraveling module includes a reference grammar database (col. 14, ln. 56 to col. 15, ln. 36, the unraveling process is interprets as the analysis process, which generates all possible candidate sequences).

4.   Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kono et al. (US Patent No. 6169972) in view of Aust (US Patent No. 5754736) and

further in view of Schwartz et al. (US Patent No. 5241619).

5.   Regarding claims 3 and 5, the modified Kono et al. discloses that the best

candidate sequence is selected (*col. 18, ln. 6-13, the best result is term of probabilities

is generated*), but fail to specifically indicate using the Viterbi algorithm to do so.

However, Schwartz et al. teach the method of using the Viterbi algorithm to search the

Trellis to find the best path (col. 9, ln. 1-12). The advantage of using the teaching of

Schwartz et al. in the modified Kono et al. is to speed up the search process.

        Since the modified Kono et al. and Schwartz et al. are analogous art because

they are from the same field of endeavors, it would have been obvious to one of

ordinary skill in the art at the time of invention to further modify Kono et al. by

incorporating the teaching of Schwartz et al. in order to speed up the search process.

6.   Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kono et al. (US Patent No. 6169972) in view of Aust (US Patent No. 5754736) and

further in view of applicant's admitted prior art.

7.   Regarding claims 2 and 7, the modified Kono et al. teach the use of grammars to

analyze word lattice (col. 15, ln. 1-67), but do not specifically indicate that the grammar

is an extended XTAG grammar. However, admitted prior art shows that XTAG is known

in the art (section [0014] page 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to further modify Kono et al. by using XTAG grammar in order to enable the system to adjoin or substitute trees to reduce processing time.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huyen Vo whose telephone number is 703-305-8665. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 703-305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner Huyen X. Vo

June 9, 2004

W. R. YOUNG
PRIMARY EXAMINER

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